Rabies

Rabies is caused by a virus that attacks the nervous system and is always fatal. Bats, skunks, foxes, raccoons, and other wild animals are the reservoirs of this disease. Humans, as well as horses and other domestic animals, may become infected when exposed to fluids such as saliva from rabid animals through bites or scratches. Horses with rabies may appear sleepy or depressed; stumble; be unable to eat, swallow or drink; make unusual vocal sounds; be aggressive; or simply seem "not right." Because the shelters built to house horses are also attractive to wild animals, rabies should always be considered when evaluating an ill horse. A vaccine to protect horses against rabies is available and its use is strongly recommended.

Prevention Checklist

- Observe your horse(s) daily.
- Keep horses on a continuous preventive medicine program designed with help from your veterinarian.
- To the greatest extent possible, take steps to reduce mosquitoes and flies in barns and stables.
- Do not re-use needles on another horse.
- At the first appearance of any of the disease signs – fever, depression, or loss of appetite – isolate sick animals and call your veterinarian.
- Avoid exposing your horse to sick horses.
- Consult/contact your veterinarian.

This brochure is intended to provide only a basic introduction to EEE, EIA, Potomac Horse Fever, EPM and Rabies. More information is available from your veterinarian.

Eastern Equine Encephalomyelitis
Causative Agent ..... Virus
Transmission ..... Mosquito bite
Detection test available ..... *No
Effective treatment program ..... No
Vaccination available ..... Yes
Human infection ..... Yes
*except postmortem

Equine Infectious Anemia
Causative Agent ..... Virus
Transmission ..... Horsefly bite
Detection test available ..... Yes
Effective treatment program ..... No
Vaccination available ..... No
Human infection ..... No

Potomac Horse Fever
Causative Agent ..... Bacteria
Transmission ..... Ingestion
Detection test available ..... Yes
Effective treatment program ..... Yes
Vaccination available ..... Yes
Human contraction ..... No

Equine Protozoal Myeloencephalitis
Causative Agent ..... Protozoal organism
Transmission ..... Ingestion
Detection test available ..... Yes
Effective treatment program ..... Variable
Vaccination available ..... No
Human infection ..... No

Rabies
Causative Agent ..... Virus
Transmission ... Body fluid/saliva exposure
Detection test available ..... *No
Effective treatment program ..... No
Vaccination available ..... Yes
Human infection ..... Yes
*except postmortem

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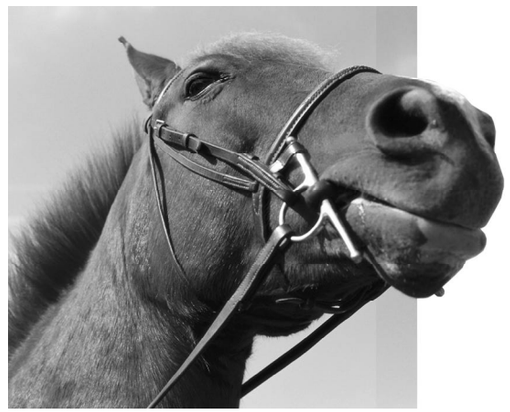
Equine Diseases in Michigan



Eastern Equine Encephalomyelitis
Equine Infectious Anemia
Potomac Horse Fever
Equine Protozoal Myeloencephalitis
Rabies

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Introduction

The horse industry is a vital component of Michigan agriculture. Understanding some of this industry's disease issues can enhance continued expansion of the industry. The obvious economic losses resulting from these diseases include: death of horses; increased veterinary costs; and cancellation of events. These diseases also have a non-economic impact, because horse owners have an emotional attachment to their animals, and there can be an inconvenience and negative image associated with disease and disease control measures.

Eastern equine encephalomyelitis, equine infectious anemia, and Potomac horse fever are three diseases of horses that are commonly confused with each other because the early signs for all three are similar and they all have complicated and often misunderstood transmission patterns. These signs include fever, depression, and loss of appetite. These signs are so general that it is often impossible to tell if a horse has one of these conditions, or some other disease. Laboratory tests, definitive symptoms observed by a veterinarian, and sometimes, postmortem exams, are required for a final diagnosis.

Equine protozoal myeloencephalitis is a disease affecting horses in Michigan and other eastern and northwestern states. Affected horses may show signs ranging from mild lameness to an inability to rise.

Rabies is a concern because it can affect any mammal, including humans, and common horse husbandry practices place horses in contact with wild animals that potentially carry the disease.

Eastern Equine Encephalomyelitis

Eastern equine encephalomyelitis (EEE), also know as "sleeping sickness," is caused by a virus that attacks the nervous system. Horses, people, birds, and a variety of small mammals can contract this disease from a mosquito bite. Mosquitoes spread the virus among wild birds. These birds serve as a reservoir of infection for other animals and mosquitoes act as the transmission vector to horses and people. The disease is not spread from horse to horse or from a horse to a human. An effective vaccine for horses is available and recommended to protect them from EEE.

Equine Infectious Anemia

Equine infectious anemia (EIA), also known as "swamp fever," is caused by a virus that attacks red blood cells. Only equine species are affected. Introducing certain body fluids, usually blood, from an infected horse to a healthy horse transmits this disease. This can be accomplished by an insect (most likely horse flies) or by a variety of mechanical means (such as the repeated use of a single needle on a number of horses, one of which is infected). Once infected, horses harbor the virus for life. **The initial signs of EIA pass quickly into one of four patterns: acute, subacute, chronic, or carrier**.

- ***Acute*** cases are more the exception than the rule. These horses rarely survive and can die within three to ten days after the virus enters their bloodstream.
- ***Subacute*** cases can also be very sick and then the symptoms become chronic. These horses may have no sign of disease for a long time then progress to a state of continuing weight loss, rough hair coat, and anemia. Relapses of increasing severity are also common.
- ***Chronic*** cases may have occasional attacks and usually have a poor hair coat, unhealthy appearance, edema, and anemia.
- ***Carrier*** animals appear healthy but harbor the virus. A horse may be a carrier for its entire life and never show signs of disease but can potentially transmit the disease to a healthy horse.

EIA tests detect the presence of antibodies to the EIA virus in the blood of the horse. Antibodies are proteins manufactured by the horse in an attempt to fight the virus. A horse that tests positive on one occasion will do so for the rest of its life (except for young foals that absorbed antibodies from their positive dam's colostrums but are not actually infected with the virus). There currently is no effective treatment or vaccination program available for this disease.

The Coggins test, the original test for EIA, takes several days to run and is considered the standard test by which other more recently developed tests are evaluated. These tests, called ELISA tests, require only a few hours to complete. Positive ELISA tests are confirmed by running the Coggins test.

Potomac Horse Fever

Potomac horse fever (PHF) is caused by a bacterium called *Erhlichia risticii* that inhabits white blood cells and cells lining the intestine. First recognized in Maryland in 1979, this disease is now found in many U.S. states, including Michigan. The bacteria are ingested when the horse grazes in areas containing snails. After initial disease signs, horses show one of two patterns. Some horses recover from their signs of illness and appear to be healthy but may experience relapses of fever, depression, and loss of appetite. Other horses develop diarrhea or colic, and/or may founder. Early treatment with appropriate antibiotics is often effective. There is a vaccine available to aid in the protection of horses from this disease.

Equine Protozoal Myeloencephalitis

Equine protozoal myeloencephalitis (EPM) is caused by a protozoal organism that invades the central nervous system of the horse, most commonly the spinal cord. The organism causes a neurological disorder resulting in clinical signs that may include frequent falling or stumbling, gait abnormalities, head tilt, severe weakness, and muscle wasting. Transmission of the organism is not completely understood, although opossums are thought to be the primary hosts in the organism's life cycle. Collection of cerebrospinal fluid by spinal tap may be necessary to diagnose the disease. Horses may be treated for the disease, although success rates vary.